Environmental Profile

This LCA is calculated according to: ISO 14044, ISO 14040 and EN 15804

Ecochain v3.5.80

Product:	3025938 - PVC Elbow 87°3 GY 63 S/SP BC
Unit:	1 Piece
Manufacturer:	Wavin - FR - Varennes

The Wavin range of PVC pipes and fittings to be glued covers all the usual diameters and allows you to create networks that are 100% compatible, homogeneous and meet the requirements of the French market.

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	24-11-2022
End of validity:	24-11-2027
Verifier:	Martijn van Hövell - SGS Search

This LCA was evaluated according to EN15804+A2. It was concluded that the LCA complies with this standard.

The LCA background information and project dossier have been registered in the online Ecochain application in the account Wavin - FR - Varennes (2020). (☑ = module declared, MND = module not declared).

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
☑	☑	☑	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	☑	☑	☑	☑

Product stage

A1 Raw material supply A2 Transport A3 Manufacturing

Construction process stage

A4 Transport gate to site
A5 Assembly / Construction installation process

Use stage

B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment
B6 Operational energy use B7 Operational water use

End-of-Life stage

C1 De-construction demolition C2 Transport C3 Waste processing
C4 Disposal

Benefits and loads beyond the system boundaries

D Reuse- Recovery- Recycling- potential

Environmental impacts and parameters

GWP-total = EF EN15804+A2 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF EN15804+A2 Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF EN15804+A2 Climate Change - Land use and LU change [kg CO2 eq]; **ODP** = EF Ozone depletion [kg CFC11 eq]; **AP** = EF Acidification [mol H+ eq]; **EP-fw** = EF Eutrophication, freshwater [kg P eq]; **EP-m** = EF Eutrophication, marine [kg N eq]; **EP-T** = EF Eutrophication, terrestrial [mol N eq]; **POCP** = EF Photochemical ozone formation [kg NMVOC eq]; **ADP-mm** = EF Resource use, minerals and metals [kg Sb eq]; **ADP-f** = EF Resource use, fossils [MJ]; **WDP** = EF Water use [m3 depriv.]; **PM** = EF Particulate matter [disease inc.]; **IR** = EF Ionising radiation [kBq U-235 eq]; **ETP-fw** = EF Ecotoxicity, freshwater [CTUe]; **HTP-c** = EF Human toxicity, cancer [CTUh]; **HTP-nc** = EF Human toxicity, non-cancer [CTUh]; **SQP** = EF Land use [Pt]; **PERE** = Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]; **PERM** = Use of renewable primary energy resources used as raw materials [MJ]; **PERT** = Total use of renewable primary energy resources [MJ]; **PENRE** = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; **PENRM** = Use of non-renewable primary energy resources used as raw materials [MJ]; **PENRT** = Total use of non-renewable primary energy resources [MJ]; **PET** = Total energy [MJ]; **SM** = Use of secondary material [kg]; **RSF** = Use of renewable secondary fuels [MJ]; **NRSF** = Use of non-renewable secondary fuels [MJ]; **FW** = Use of net fresh water [m3]; **HWD** = Hazardous waste disposed [kg]; **NHWD** = Non-hazardous waste disposed [kg]; **RWD** = Radioactive waste disposed [kg]; **CRU** = Components for re-use [kg]; **MFR** = Materials for recycling [kg]; **MER** = Materials for energy recovery [kg]; **EE** = Exported energy [MJ]; **EET** = Exported energy thermic [MJ]; **EEE** = Exported energy electric [MJ]

Statement of Confidentiality

Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.29E-1	7.69E-3	1.24E-2	2.49E-1	3.19E-3	1.52E-1	9.82E-4	-1.31E-1	2.74E-1
GWP-f	kg CO2 eq	2.72E-1	7.68E-3	9.44E-3	2.89E-1	3.18E-3	9.58E-2	9.82E-4	-1.54E-1	2.35E-1
GWP-b	kg CO2 eq	-4.34E-2	4.66E-6	2.95E-3	-4.04E-2	1.93E-6	5.62E-2	1.24E-6	2.33E-2	3.91E-2
GWP-luluc	kg CO2 eq	3.75E-4	2.72E-6	1.30E-5	3.90E-4	1.13E-6	3.99E-5	2.62E-8	-2.76E-4	1.56E-4
ODP	kg CFC11 eq	1.35E-7	1.77E-9	1.27E-9	1.38E-7	7.34E-10	1.11E-8	3.73E-11	-6.92E-8	8.12E-8
AP	mol H+ eq	1.32E-3	4.38E-5	6.97E-5	1.43E-3	1.81E-5	1.94E-4	9.05E-7	-6.55E-4	9.90E-4
EP-fw	kg P eq	1.32E-5	6.32E-8	2.32E-7	1.35E-5	2.62E-8	1.33E-6	1.18E-9	-7.25E-6	7.58E-6
EP-m	kg N eq	2.50E-4	1.57E-5	1.93E-5	2.85E-4	6.49E-6	4.89E-5	5.55E-7	-1.24E-4	2.17E-4
EP-T	mol N eq	2.69E-3	1.73E-4	2.52E-4	3.11E-3	7.15E-5	5.38E-4	3.61E-6	-1.36E-3	2.37E-3
POCP	kg NMVOC eq	8.56E-4	4.93E-5	5.71E-5	9.63E-4	2.05E-5	1.61E-4	1.24E-6	-4.43E-4	7.02E-4
ADP-mm	kg Sb eq	2.47E-4	1.99E-7	2.79E-7	2.48E-4	8.24E-8	7.67E-7	9.07E-10	-2.96E-6	2.46E-4
ADP-f	MJ	6.63E+0	1.18E-1	1.29E-1	6.88E+0	4.89E-2	5.19E-1	2.72E-3	-3.58E+0	3.87E+0
WDP	m3 depriv.	4.12E-1	3.62E-4	2.32E-1	6.45E-1	1.50E-4	1.98E-2	1.81E-5	-2.27E-1	4.38E-1
PM	disease inc.	1.04E-8	6.93E-10	9.64E-10	1.20E-8	2.88E-10	2.44E-9	1.87E-11	-6.26E-9	8.51E-9
IR	kBq U-235 eq	1.53E-2	5.15E-4	3.41E-4	1.61E-2	2.14E-4	1.85E-3	1.25E-5	-7.93E-3	1.03E-2
ETP-fw	CTUe	9.34E+0	9.57E-2	1.66E-1	9.60E+0	3.97E-2	3.87E+0	4.23E-2	-3.84E+0	9.71E+0
HTP-c	CTUh	2.33E-10	3.41E-12	1.09E-11	2.48E-10	1.41E-12	5.97E-11	7.47E-14	-1.00E-10	2.08E-10
HTP-nc	CTUh	7.11E-9	1.14E-10	3.11E-10	7.53E-9	4.73E-11	1.38E-9	8.13E-12	-3.03E-9	5.93E-9
SQP	Pt	5.65E+0	1.01E-1	1.16E+0	6.91E+0	4.18E-2	3.19E-1	6.95E-3	-7.89E+0	-6.03E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.07E+0	1.69E-3	2.95E-1	1.36E+0	7.01E-4	3.66E-2	1.00E-4	-1.41E+0	-4.30E-3
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.07E+0	1.69E-3	2.95E-1	1.36E+0	7.01E-4	3.66E-2	1.00E-4	-1.41E+0	-4.30E-3
PENRE	MJ	7.12E+0	1.25E-1	1.39E-1	7.38E+0	5.19E-2	5.53E-1	2.89E-3	-3.86E+0	4.13E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	7.12E+0	1.25E-1	1.39E-1	7.38E+0	5.19E-2	5.53E-1	2.89E-3	-3.86E+0	4.13E+0
PET	MJ	8.18E+0	1.27E-1	4.34E-1	8.74E+0	5.26E-2	5.89E-1	2.99E-3	-5.26E+0	4.13E+0
SM	kg	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m3	4.85E-3	1.33E-5	5.44E-3	1.03E-2	5.53E-6	5.47E-4	3.33E-6	-2.95E-3	7.92E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.60E-5	3.02E-7	1.69E-7	3.65E-5	1.25E-7	8.65E-7	3.31E-9	-3.28E-6	3.42E-5
NHWD	kg	3.10E-2	7.31E-3	1.25E-3	3.96E-2	3.03E-3	1.94E-2	1.21E-2	-1.38E-2	6.02E-2
RWD	kg	1.37E-5	8.02E-7	3.43E-7	1.49E-5	3.32E-7	2.01E-6	1.77E-8	-7.20E-6	1.00E-5
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0	0	0

Ecochain

Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
https://www.ecochain.com
+31 20 3035 777